

Impact of smoking on overall mortality and life expectancy in Japanese smokers: a prospective cohort study

R Sakata, P McGale, EJ Grant, K Ozasa, R Peto, SC Darby.

BMJ 2012;345:e7093 doi: 10.1136/bmj.e7093

Supplementary Online Content

Extra table 1a. Mortality from all causes among current and ex-smokers compared with never smokers by sex and calendar period.

Extra table 1b. Mortality from all causes among current and ex-smokers who started to smoke at age <20 years compared with never smokers by sex and calendar period.

Extra table 2a. Mortality from all causes among current smokers compared with never smokers by sex and attained age.

Extra table 2b. Mortality from all causes among current smokers who started to smoke at age <20 years compared with never smokers by sex and attained age.

Extra fig 1. Frequency distribution of age starting to smoke amongst current smokers by sex and year of birth.

Extra fig 2a. Survival for never smokers and current smokers, by sex and year of birth. Survival curves are from age 55 for those born <1920 and from age 35 for those born 1920-45.

Extra fig 2b. Survival for never smokers and current smokers who started at age <20 years, by sex and year of birth. Survival curves are from age 55 for those born <1920 and from age 35 for those born 1920-45.

Extra fig 2c. Survival for lifelong non-smokers and current smokers who started at ages <20 years and 20+ years, by sex and year of birth. Survival curves are from age 55 for those born <1920 and from age 35 for those born 1920-45.

Extra fig 3. Survival from age 35 for lifelong non-smokers and current smokers, by sex.

Extra table 3a. Association between most recent smoking status and possible confounding factors.

Extra table 3b. Association between most recent smoking status and possible confounding factors for those who started to smoke at age <20 years.

Extra table 1a. Mortality from all causes among current and ex-smokers compared with never smokers by sex and calendar period.

Calendar period	Never smokers	Current smokers		Ex-smokers	
	No of deaths	No of deaths	Rate ratio vs never smokers* (95% CI)	No of deaths	Rate ratio vs never smokers* (95% CI)
Males					
1965-74	298	1950	1.45 (1.28,1.64)	309	1.16 (0.99,1.36)
1975-84	457	2599	1.63 (1.47,1.80)	787	1.45 (1.29,1.62)
1985-94	569	2566	1.55 (1.41,1.70)	1024	1.30 (1.17,1.44)
1995-04	527	2307	1.54 (1.40,1.70)	1031	1.16 (1.04,1.29)
2005-08	145	690	1.58 (1.32,1.89)	295	1.18 (0.97,1.44)
<i>p for trend</i>			0.7		0.2
All periods	1,996	10,112	1.55 (1.48,1.63)	3,446	1.26 (1.19,1.33)
Females					
1965-74	965	303	1.53 (1.34,1.74)	45	1.14 (0.85,1.54)
1975-84	2,561	629	1.58 (1.45,1.73)	178	1.49 (1.28,1.74)
1985-94	4,156	770	1.55 (1.43,1.67)	354	1.30 (1.17,1.45)
1995-04	5,022	736	1.58 (1.46,1.71)	481	1.26 (1.15,1.38)
2005-08	1,646	240	1.71 (1.49,1.95)	122	1.12 (0.93,1.35)
<i>p for trend</i>			0.4		0.1
All periods	14,350	2,678	1.58 (1.51,1.64)	1,180	1.28 (1.21,1.36)

* Rate ratios stratified for age

Extra table 1b. Mortality from all causes among current and ex-smokers who started to smoke at age <20 years compared with never smokers by sex and calendar period.

Calendar period	Never smokers	Current smokers		Ex-smokers	
	No of deaths	No of deaths	Rate ratio vs never smokers* (95% CI)	No of deaths	Rate ratio vs never smokers* (95% CI)
Males					
1965-74	298	398	1.62 (1.39,1.89)	53	1.20 (0.90,1.61)
1975-84	457	512	1.86 (1.63,2.12)	143	1.80 (1.49,2.17)
1985-94	569	609	1.97 (1.74,2.23)	145	1.32 (1.09,1.58)
1995-04	527	662	1.86 (1.65,2.10)	193	1.19 (1.01,1.40)
2005-08	145	212	1.78 (1.44,2.21)	67	1.30 (0.97,1.74)
<i>p for trend</i>			0.3		0.09
All periods	1996	2393	1.84 (1.73,1.96)	601	1.34 (1.22,1.47)
Females					
1965-74	965	11	1.24 (0.68,2.26)	5	2.25 (0.93,5.43)
1975-84	2561	25	1.69 (1.14,2.51)	10	2.12 (1.14,3.94)
1985-94	4156	35	2.10 (1.50,2.92)	13	1.86 (1.08,3.21)
1995-04	5022	38	2.15 (1.56,2.96)	14	1.25 (0.74,2.11)
2005-08	1646	10	1.79 (0.96,3.34)	5	1.46 (0.61,3.51)
<i>p for trend</i>			0.2		0.2
All periods	14,350	119	1.87 (1.56,2.24)	47	1.65 (1.24,2.19)

* Rate ratios stratified for age

Extra table 2a. Mortality from all causes among current smokers compared with never smokers by sex, year of birth and attained age.

Attained age (years)	Males						Females					
	Year of birth						Year of birth					
	<1920			1920-45			<1920			1920-45		
	No of deaths never smokers	No of deaths current smokers	Rate ratio current vs never* (95% CI)	No of deaths never smokers	No of deaths current smokers	Rate ratio current vs never * (95% CI)	No of deaths never smokers	No of deaths current smokers	Rate ratio current vs never* (95% CI)	No of deaths never smokers	No of deaths current smokers	Rate ratio current vs never* (95% CI)
20-59	30	293	1.34 (0.92,1.96)	100	885	1.87 (1.52,2.30)	84	25	1.22 (0.78,1.91)	768	137	1.48 (1.23,1.77)
60-69	142	1334	1.69 (1.42,2.01)	144	1084	1.91 (1.60,2.27)	510	197	1.75 (1.48,2.07)	964	194	1.74 (1.49,2.03)
70+	1420	5396	1.44 (1.35,1.52)	160	1120	1.88 (1.60,2.22)	10001	1725	1.49 (1.41,1.57)	2023	400	1.99 (1.79,2.22)
<i>p for trend</i>			<i>0.3</i>			<i>1.0</i>			<i>0.3</i>			<i>0.004</i>
All ages	1592	7023	1.46 (1.38,1.54)	404	3089	1.89 (1.70,2.10)	10595	1947	1.50 (1.43,1.58)	3755	731	1.81 (1.67,1.96)

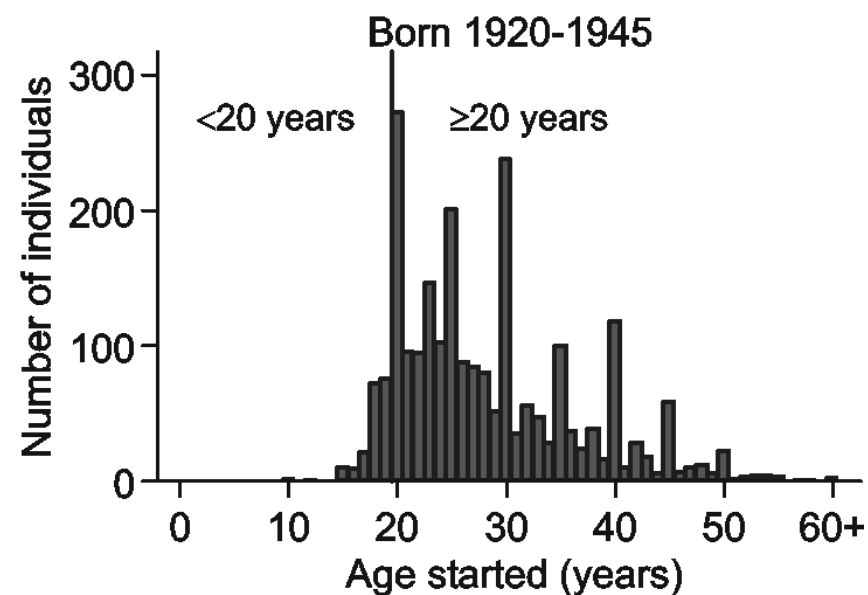
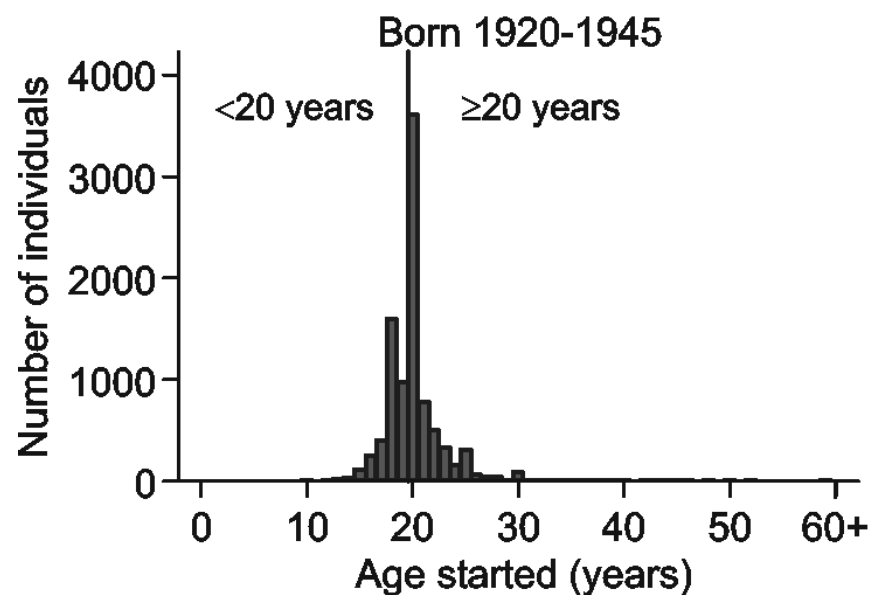
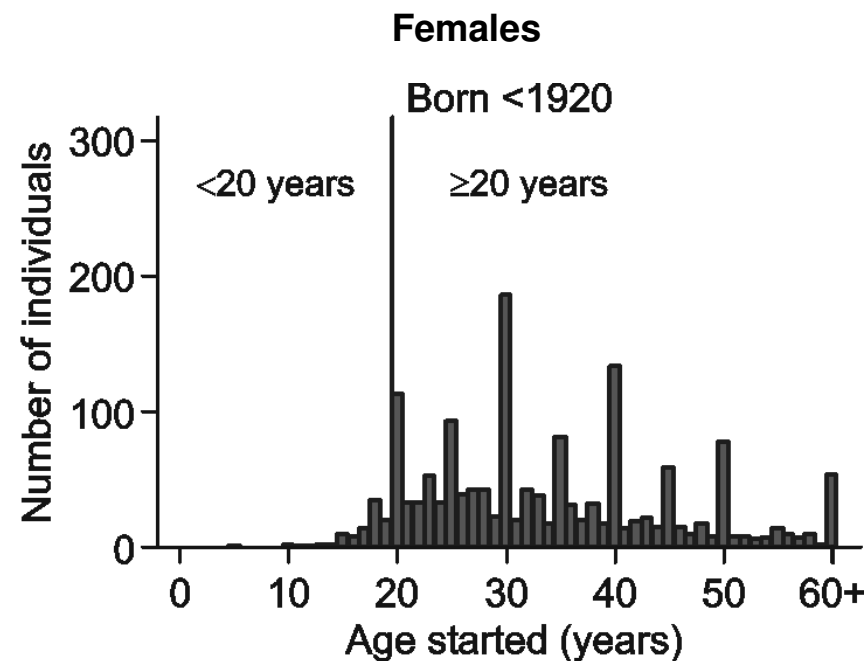
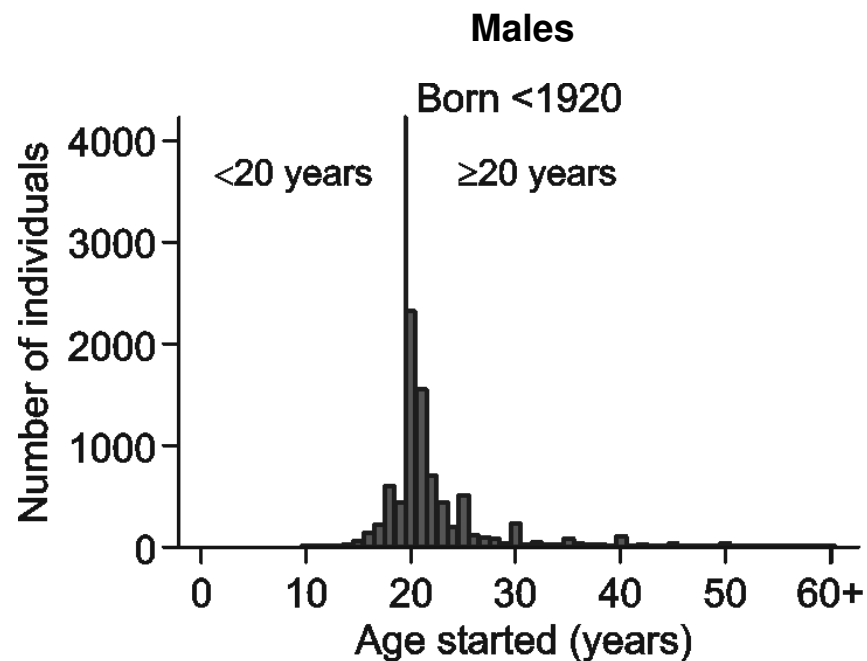
* Rate ratios stratified for age and calendar period

Extra table 2b. Mortality from all causes among current smokers who started to smoke at age <20 years compared with never smokers by sex, year of birth and attained age.

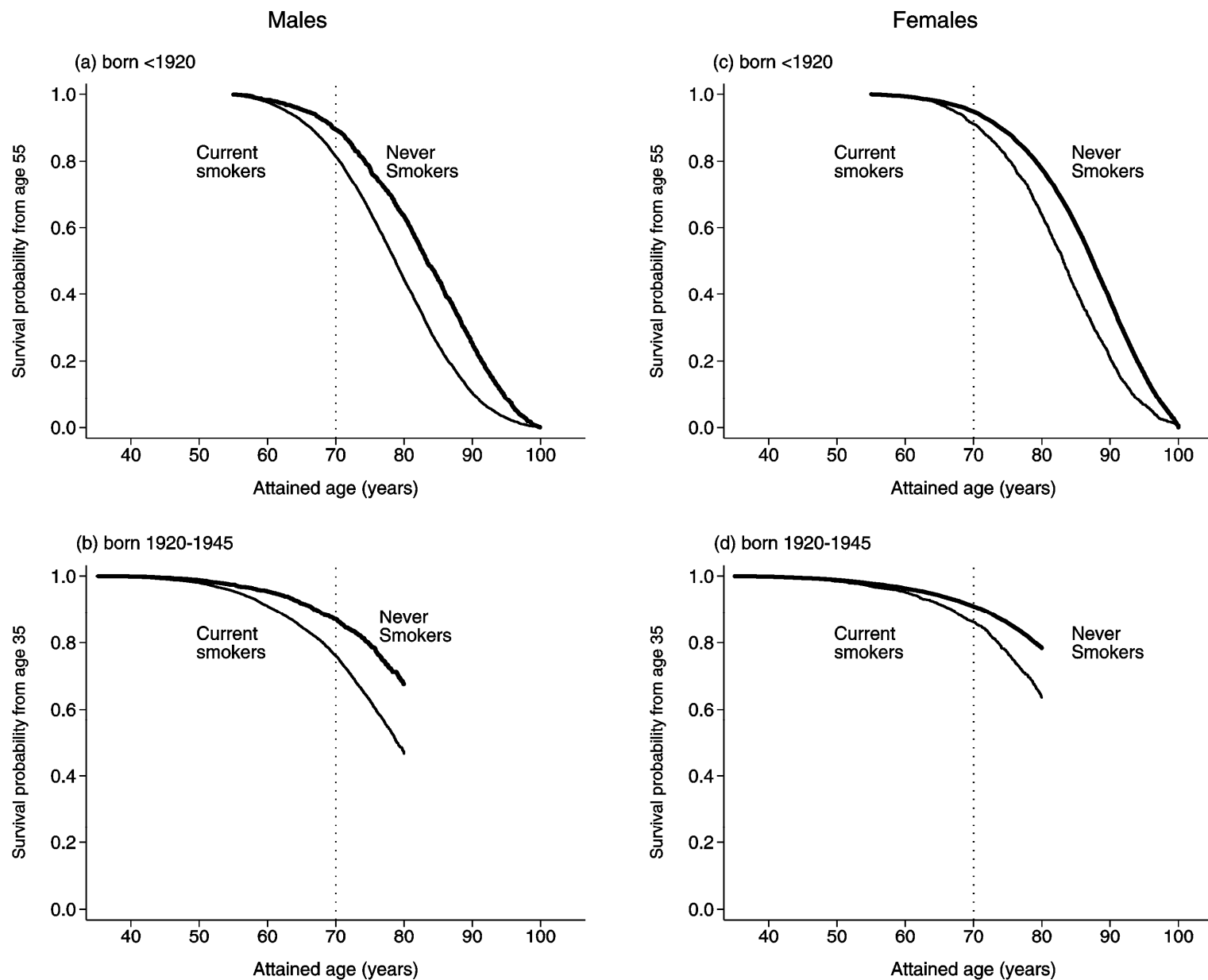
Attained age (years)	Year of birth						Year of birth					
	<1920			1920-45			<1920			1920-45		
	No of deaths never smokers	No of deaths current smokers	Rate ratio current vs never* (95% CI)	No of deaths never smokers	No of deaths current smokers	Rate ratio current vs never* (95% CI)	No of deaths never smokers	No of deaths current smokers	Rate ratio current vs never* (95% CI)	No of deaths never smokers	No of deaths current smokers	Rate ratio current vs never* (95% CI)
20-59	30	68	1.75 (1.14,2.69)	100	362	2.28 (1.83,2.85)	84	1		768	11	1.88 (1.04,3.41)
60-69	142	254	1.84 (1.50,2.27)	144	408	2.25 (1.86,2.72)	510	10	2.47 (1.32,4.64)	964	19	3.07 (1.95,4.84)
70+	1420	950	1.68 (1.54,1.82)	160	351	2.11 (1.75,2.54)	10001	57	1.45 (1.12,1.88)	2023	21	2.74 (1.79,4.22)
<i>p for trend</i>			0.5			0.6			0.1			0.4
All ages	1592	1272	1.69 (1.57,1.83)	404	1121	2.20 (1.97,2.47)	10595	68	1.54 (1.22,1.96)	3755	51	2.59 (1.97,3.42)

* Rate ratios stratified for age and calendar period

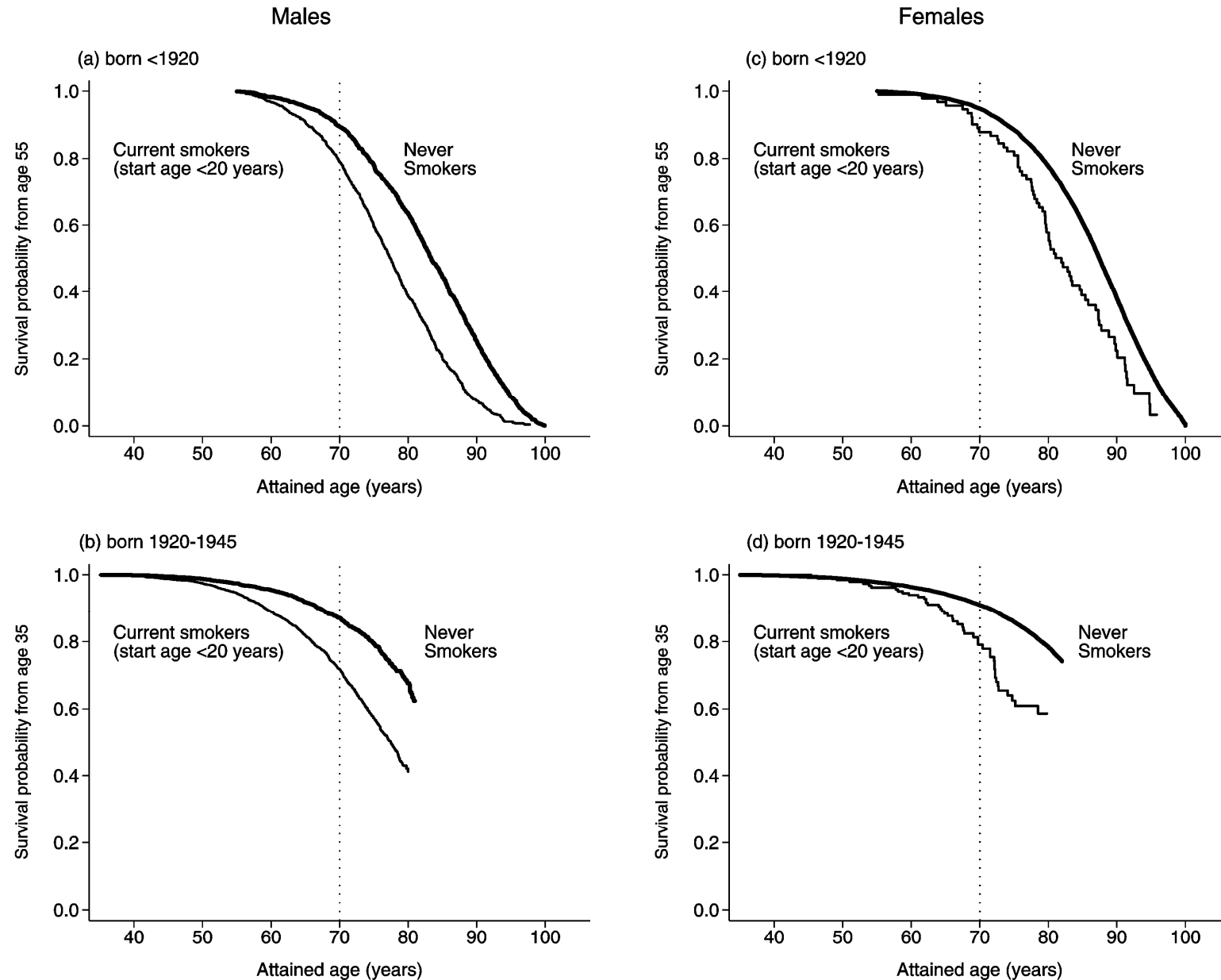
Extra fig 1. Frequency distribution of age starting to smoke amongst current smokers by sex and year of birth.



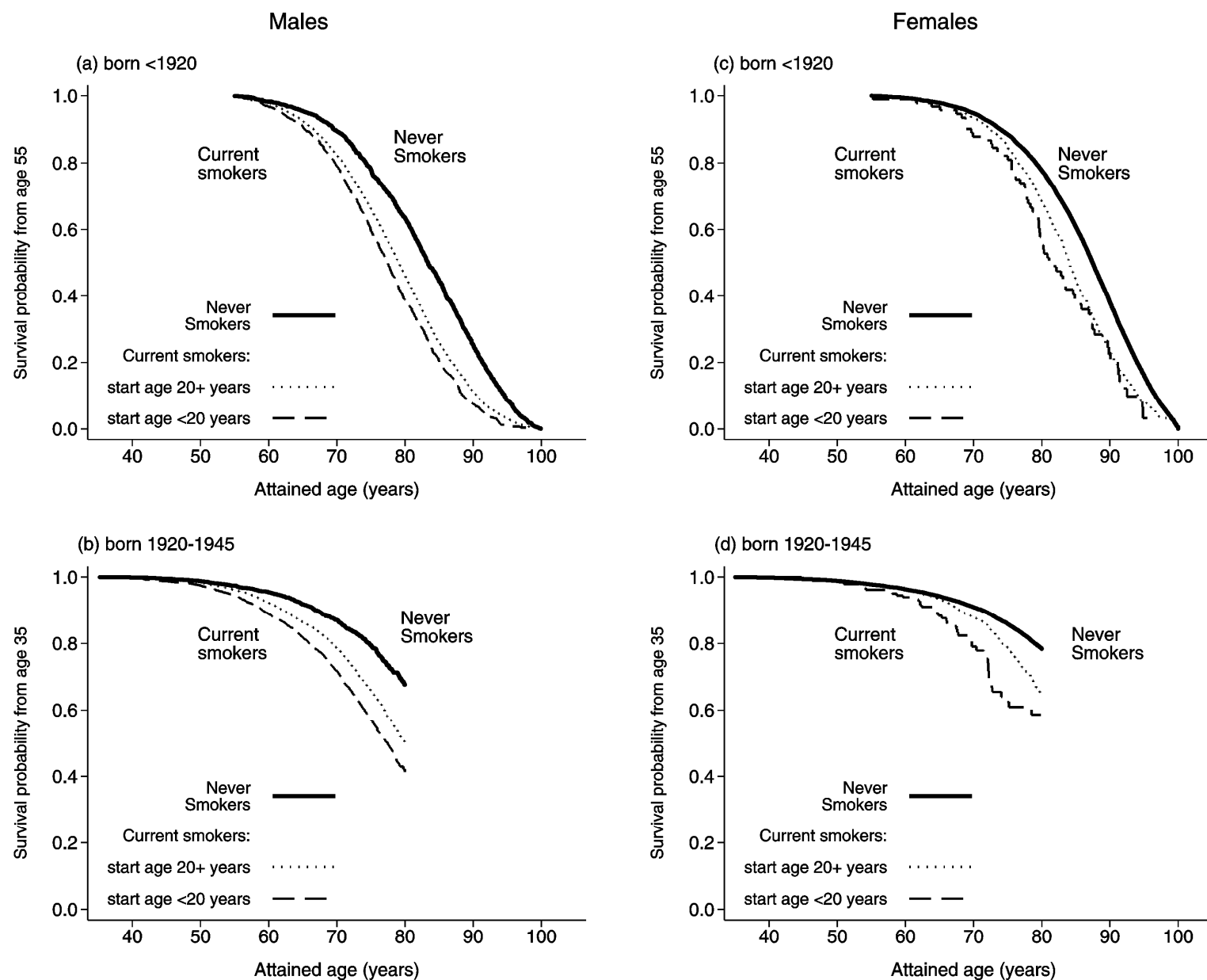
Extra fig 2a. Survival for never smokers and current smokers, by sex and year of birth. Survival curves are from age 55 for those born <1920 and from age 35 for those born 1920-45.



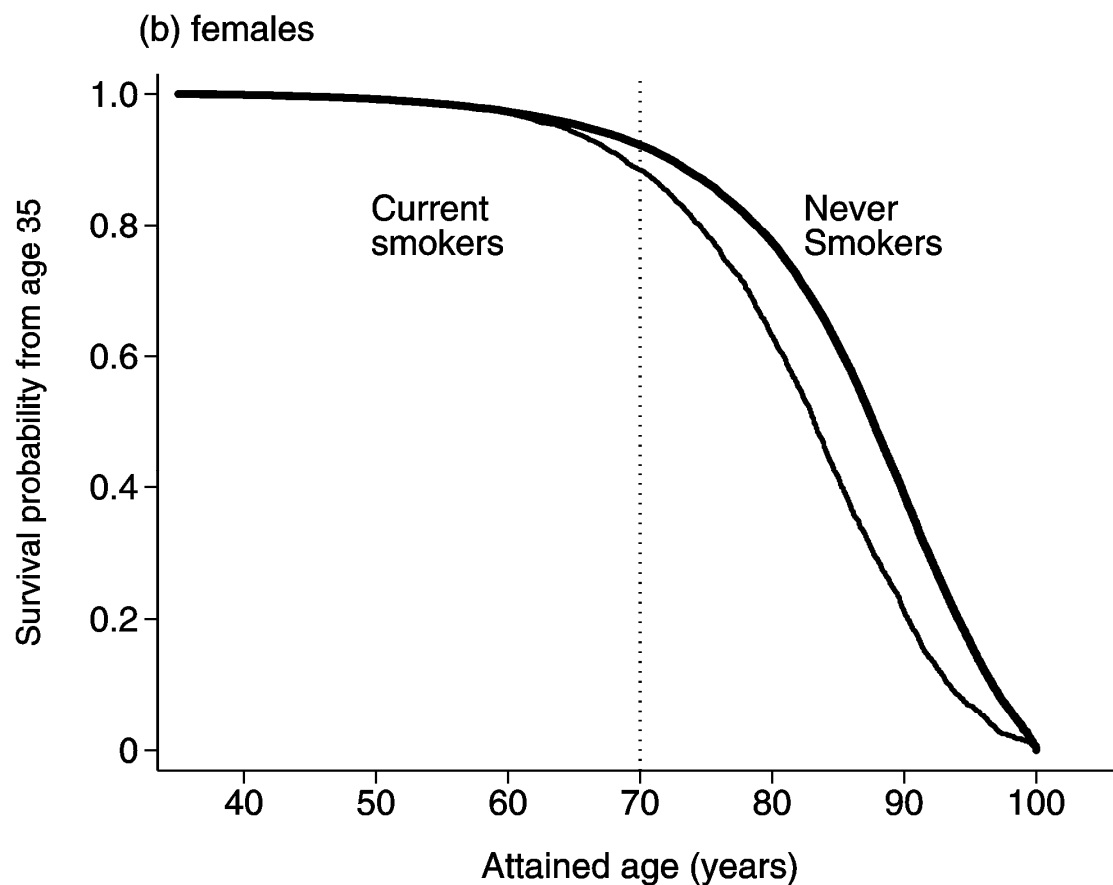
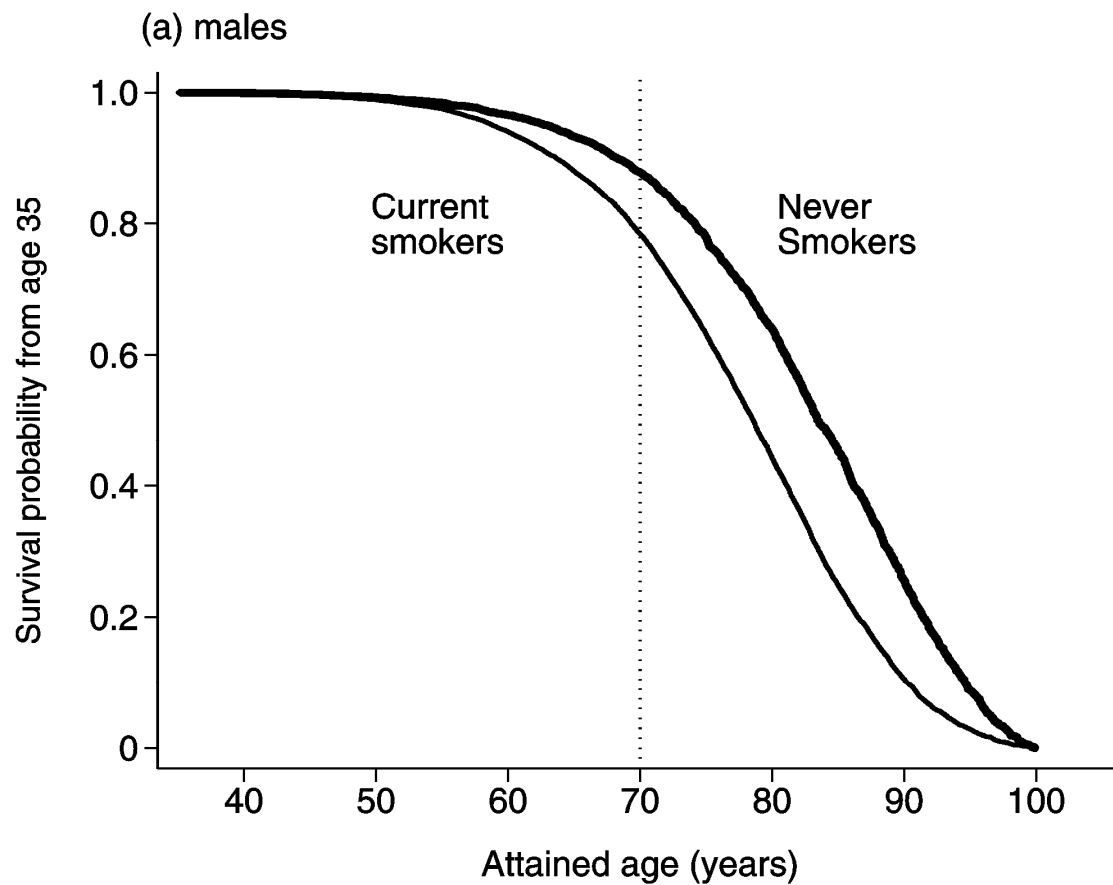
Extra fig 2b. Survival for never smokers and current smokers who started at age <20 years, by sex and year of birth. Survival curves are from age 55 for those born <1920 and from age 35 for those born 1920-45.



Extra fig 2c. Survival for lifelong non-smokers and current smokers who started at ages <20 years and 20+ years, by sex and year of birth. Survival curves are from age 55 for those born <1920 and from age 35 for those born 1920-45.



Extra fig 3. Survival from age 35 for lifelong non-smokers and current smokers, by sex.



Extra table 3a. Association between most recent smoking status and possible confounding factors.

Factor	Males				Females			
	Never Smokers (%)	Current Smokers (%)	Ex-smokers (%)	Total	Never Smokers (%)	Current Smokers (%)	Ex-smokers (%)	Total
Alcohol intake (gm/week)								
0	19	11	13	14	70	51	53	67
1-45	7	5	7	6	6	8	8	7
45-100	10	7	10	8	11	13	15	11
100-250	22	21	25	22	2	7	5	3
250-7000	14	21	19	20	1	4	2	1
Unknown	27	35	26	31	10	16	17	11
BMI (kg m⁻²)								
10-20	24	33	28	30	27	35	28	29
20-22	26	28	25	27	25	21	22	24
22-24	23	19	22	21	20	17	20	19
24-61	24	18	23	20	23	20	25	23
Unknown	3	2	2	2	5	7	5	5
Highest education status								
Pre-High School	41	43	37	41	43	57	53	46
High School	35	38	38	38	46	33	40	44
College/University	20	16	21	18	7	3	4	6
Unknown	4	3	3	3	4	7	4	4
Lung dose (mGy)								
Not in city	11	18	7	14	15	19	6	15
0-5	36	33	36	34	34	28	34	33
5-100	26	24	28	26	25	25	31	26
100-200	6	6	6	6	6	7	8	6
200-500	6	6	6	6	6	8	8	6
500-1000	4	3	4	3	3	4	4	4
1000-2000	2	2	2	2	2	2	2	2
2000+	1	1	1	1	1	1	1	1
Unknown	8	7	9	8	7	6	6	7
Total	100	100	100	100	100	100	100	100
Number of persons	3,873	16,318	7,120	27,311	33,736	4,494	2,432	40,662

Smokers are classified according to their most recent (known) smoking status. Results based on earliest smoking status differ little.

Extra table 3b. Association between most recent smoking status and possible confounding factors for those who started to smoke at age <20 years.

Factor	Males				Females			
	Never Smokers (%)	Current Smokers (%)	Ex- smokers (%)	Total	Never Smokers (%)	Current Smokers (%)	Ex- smokers (%)	Total
Alcohol intake (gm/week)								
0	19	10	12	15	70	40	44	70
1-45	7	5	6	6	6	9	6	6
45-100	10	8	10	9	11	17	18	11
100-250	23	22	25	22	2	6	8	2
250-7000	14	29	26	22	1	10	4	1
Unknown	27	26	21	26	10	18	20	10
BMI (kg m⁻²)								
10-20	24	33	24	29	27	34	28	27
20-22	26	27	24	26	25	19	26	25
22-24	23	19	23	21	20	19	21	20
24-61	24	19	27	22	23	22	21	23
Unknown	3	2	2	2	5	6	4	5
Highest education status								
Pre-High School	41	47	43	44	43	66	74	44
High School	35	40	38	38	46	27	24	46
College/University	20	11	16	15	7	1	1	6
Unknown	4	2	3	3	4	6	1	4
Lung dose (mGy)								
Not in city	11	14	5	11	15	8	5	15
0-5	36	34	39	36	34	31	30	34
5-100	26	25	28	26	25	27	25	25
100-200	6	6	7	6	6	6	11	6
200-500	6	6	6	6	6	10	11	6
500-1000	4	4	3	4	4	6	4	4
1000-2000	2	3	2	2	2	2	3	2
2000+	1	1	1	1	1	3	2	1
Unknown	8	7	9	8	7	7	9	7
Total	100	100	100	100	100	100	100	100
Number of persons	3,873	4,363	1,479	9,715	33,736	109	248	34,093

Smokers are classified according to their most recent (known) smoking status. Results based on earliest smoking status differ little.